# Transportation

# TRANSPORTATION

## Highway Use and Congestion

### Why is this important?

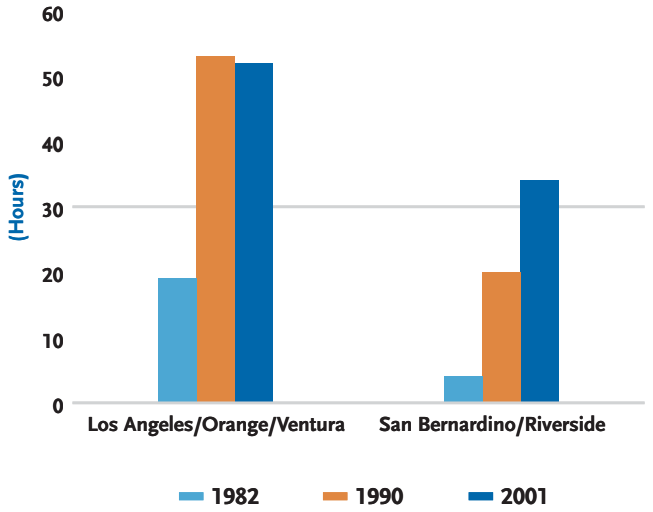
**▲▲ Highway congestion causes delay resulting in increased economic and social costs. In addition, congestion impacts the air quality in the region. The number of vehicle miles traveled (VMT) indicates the overall level of highway and automobile usage, and is directly related to mobile source emissions. ▲▲**

### How are we doing?

*From 1990 to 2001, the region consistently ranked as the most congested metropolitan region in the nation.* Congestion is measured by indicators such as annual delay per person. For example, residents in the region incurred a total of 50 hours of delay per person due to traffic congestion in 2001, the highest among the metropolitan regions in the nation (see Figure 77 page 93). Nevertheless, between 1990 and 2001, annual delay per person stayed almost unchanged in the SCAG region while increased significantly in other large metropolitan areas. In addition, total cost incurred due to congestion in the SCAG region was $13.8 billion in 2001, significantly higher than any other metropolitan regions in the nation (see Figure 78 page 94).

Within the region, residents in the coastal counties (Los Angeles, Orange and Ventura) experienced a total of 52 hours of delay per person in 2001 versus 34 hours of delay in San Bernardino and Riverside counties (Figure 37). Since 1990, annual delay per person in the Inland Empire has increased by 70 percent (from 20 to 34 hours) while delay per person in the three coastal counties has been more stable. This is partly because that total licensed drivers increased by 26 percent in the Inland Empire compared to 7 percent in the three coastal counties during the past decade.[1]

**Figure 37**
**Annual Delay Per Person**



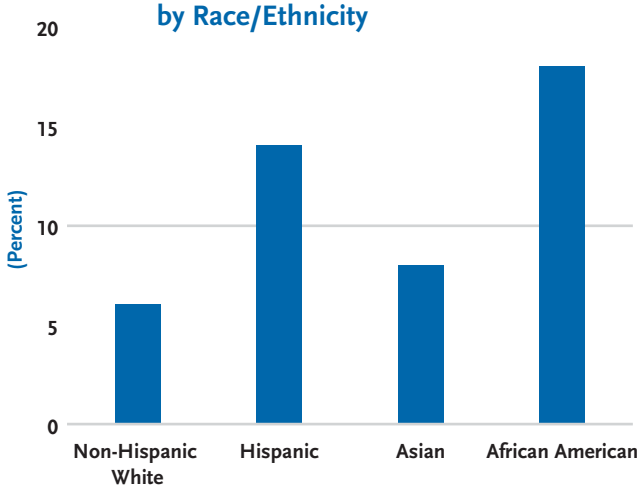

*Source: Texas Transportation Institute*

In 2001, total vehicle miles traveled (VMT) in the region reached over 144 billions which was almost the same as in 2000.[2] Between 1990 and 2000, total VMT increased about 13 percent, a sharp decline from the 71 percent growth during the 1980s.[3] One factor that contributed to the recent slower growth of total VMT in the region is the decline of automobile ownership rates, contrary to the increasing trend at the national level. For example, between 1991 and 2001, the number of vehicles per licensed driver declined throughout the region while increased at the national level (see Figure 37a page 106). Among the nine largest metropolitan regions, Southern California was the only region where the percentage of households who owned at least one vehicle decreased during the 1990s (see Figure 79 page 94). Declining household income in the region is a primary factor for the declining vehicle ownership rates.

Based on the 2000 Census, the region had significantly higher percentages of African American (18 percent) and Hispanic households (14 percent) without owning a vehicle than non-Hispanic White (6 percent) and Asian (8 percent) households (Figure 38). Since public transit only plays a very limited role in providing overall mobility, declining vehicle ownership rates are likely to widen the personal mobility gaps and hence exacerbate the social and economic disparities in the region.

As to the use of automobiles in the region, vehicle driver trips per household decreased slightly from 5.4 to 4.7 per day between 1991 and 2001. In addition, average vehicle occupancy increased for all trips regardless of trip purpose. From 1991 to 2001, average vehicle occupancy for all personal vehicle trips in the region increased from 1.46 to 1.58.[4]

**Figure 38**
**Households Without a Vehicle by Race/Ethnicity**




*Source: 2000 Census*

## Highway Fatalities

### Why is it important?

**▲▲ Transportation accidents are the ninth leading cause of death in the United States. *Highway accident fatalities in the nation, about 42,000 deaths in 2000, accounted for about 95 percent of transportation-related deaths. Highway accidents are the leading cause of death for people between ages of 4 and 33.*[5] Highway accidents also accounted for close to half of the total annual delay from the region's highway system. ▲▲**

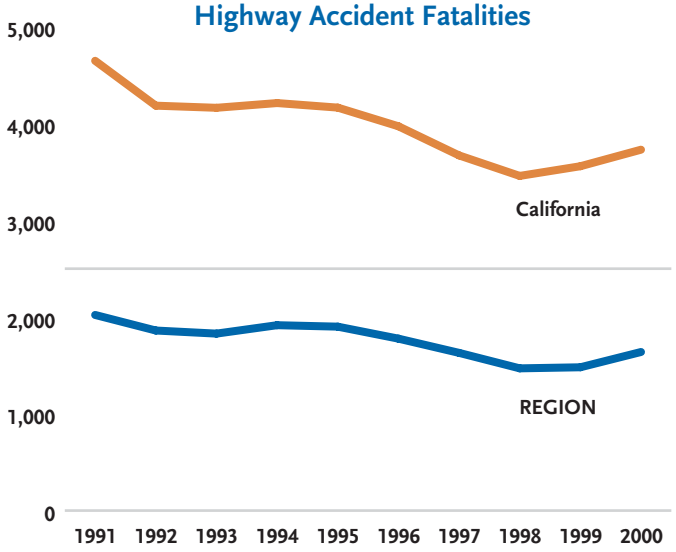
## How are we doing?

In 2000, motor vehicle crashes in the region resulted in 1,639 fatalities, or more than 4 deaths per day (Figure 39). This was a significant increase from the previous two years at approximately 1,470 fatalities. However, the region's fatality level in 2000 was still well below that in 1991. Crashes involving large trucks alone in the region resulted in 155 fatalities in 2000. *The region's highway accident fatality rate in 2000 was 1.13 persons per 100 million vehicle miles, which was significantly higher than the national average (0.94 persons per 100 million vehicle miles) for urban areas.*[6]

Human behavior, such as alcohol and drug use, careless operation of vehicles, is a major factor contributing to a high proportion of crashes. Close to 80 percent of highway fatalities involved occupants of passenger cars and light trucks. The remaining fatalities included primarily pedestrians, motorcyclists, bicyclists and large truck occupants.

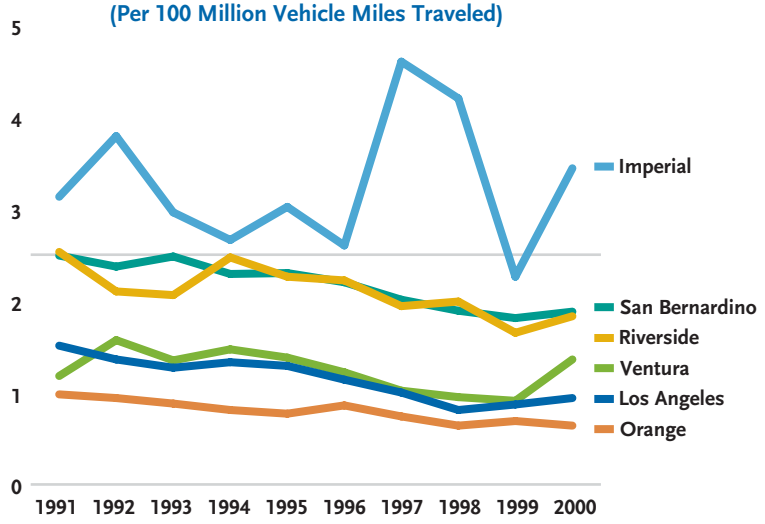
*From 1990 to 2000, total highway accident fatality rates generally declined in the region with the exception of Imperial County* (Figure 40). Factors contributing to the decreasing fatality rates include, for example, promotion of safety belts, child safety seats, motorcycle helmet usage and measures to discourage drunk driving. Within the region, Imperial County has consistently had the highest highway fatality rates while Orange County had the lowest. In addition, the counties in Inland Empire had similar fatality rates, as did the three coastal counties.

**Figure 39**
**Highway Accident Fatalities**




*Source: California Highway Patrol*

**Figure 40**
**Highway Accident Fatalities**
**(Per 100 Million Vehicle Miles Traveled)**




*Source: California Highway Patrol*

## Transit Use and Performance

### Why is this important?

**▲▲ Use of public transit helps to improve congestion and air quality and decrease energy consumption. Reliable and safe transit services are essential for many residents to participate in the economic, social and cultural life in Southern California. Work trips account for less than half of total transit trips. The indicator of annual transit boardings measures the level of transit use at the system level. In addition, transit trips per capita provides a measure of transit use at the individual level. ▲▲**

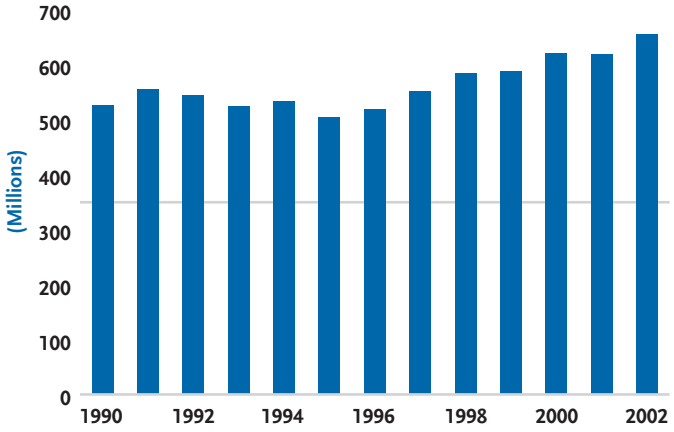
### How are we doing?

Total transit boardings increased by more than six percent in Fiscal Year 2002 and reached almost 660 million based on preliminary estimates (Figure 41). This was a recovery from a slight decline of 0.3 percent in Fiscal Year 2001 due to the Los Angeles County Metropolitan Transportation Authority (MTA) bus labor union strike in late 2000. Between Fiscal Years 2000 and 2002, the approximate 6 percent increase in total transit boardings was higher than the population growth of 4 percent.

Total transit boardings declined during the early part of the 1990s and have been on an upward swing since 1995. In 2002, transit trips per capita were at 38, which was slightly higher than the 1990 level at 36. An increase in the number of households without a car provides an expanded pool of potential transit riders. In 2000, more than 540,000 households in the region did not own a car, an increase of more than 100,000 households from 1990.[7] Expanded transit services, particularly the heavy rail, light rail and commuter rail, also attracted new transit riders. Nevertheless, transit uses in the region currently account for only about 5 percent of the total work trips and 2 percent of the total person trips.

In addition to the recovery of the MTA bus system during 2002, several major operators experienced significant growth. For example, both the Orange County Transportation Authority and Los Angeles County MTA Heavy Rail (Red Line) achieved a 10-percent increase in their total transit boardings.

**Figure 41**
**Transit Boardings - All Major Operators**




** Based on Fiscal Year not Calendar Year*

*Source: National Transit Database and SCAG including preliminary estimates for 2002 data*

In 2002, new bus rapid transit (BRT) services started along Vermont and South Broadway in Los Angeles County. These represented the first north-south corridor services in the region in addition to the Wilshire/Whittier and Ventura Boulevard Metro Rapid Services that serve east-west corridors. BRT combines the flexibility of a bus system with shorter travel times utilizing capabilities such as signal priority. Within the variety of transit service options, BRT is an important initiative for improving mobility in the most urbanized portions in the region. BRT services are also scheduled by 2004 in two corridors in Orange County, the Harbor Boulevard and Westminister Avenue/17th Street. Finally, the 91 commuter rail line, also launched in May 2002, provides commuter train services connecting Riverside, Orange and Los Angeles counties via Fullerton.

## Journey to Work: Travel Time

### Why is this important?

**▲▲ Though the share of work trips among total trips has been declining, work trips continue to generate disproportionately higher impacts. Work trips tend to take longer than other daily trips. In addition, commute hours are generally the period with the most traffic congestion. Accordingly, transportation investments are still influenced significantly by the nature of work trips. Finally, the choice of residential location is partly determined by the location of work and the associated journey to work. ▲▲**

### How are we doing?

Between 1990 and 2000, average travel time to work in the region increased from about 26 to 29 minutes, and continued to be higher than the state and national averages.[8] From 2000 to 2002, there was no change in the average travel time to work in the region, the state and the nation.[9] In 2002, workers in the Inland Empire (Riverside and San Bernardino counties) continued to have the highest average travel time to work in the region.

## Journey to Work: Mode Choices

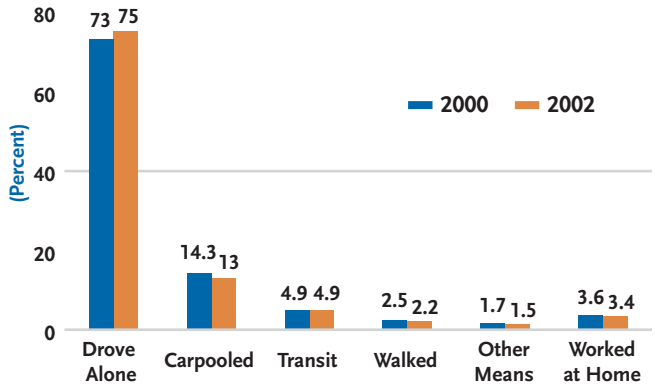
### Why is this important?

**▲▲ Single-occupant vehicle use accounts for the highest level of land consumption among all transportation modes. It also generates the highest level of environmental, economic and social impacts. Increasing the use of alternative modes to work (e.g., carpool, transit, telework, etc.) is critical to accommodate future growth with less environmental, economic and social impacts. ▲▲**

### How are we doing?

Based on the 2000 Census, among the nine largest metropolitan regions, the SCAG region had the highest rate (15 percent) of workers who carpooled to work and the third lowest rate (5 percent) for using transit to work.[10] From 2000 to 2002, there was a slight decrease in carpooling share (-1.3 percent) and a slight increase in the share of drive-alone commuting (2 percent) in the region (Figure 42).[11] This was similar to the trend at the national level. The region's share of using public transit among work trips remained unchanged.[12]

**Figure 42**
**Mode Choice to Work**
**(Workers 16 Years and Over)**




*Source: U.S. Census Bureau*

## Telework[13]

In 2002, almost 75 percent of total workers in the region drove to work alone. Alternatives to the single-occupant vehicle include, for example, carpool, transit, bicycling, walking and work-at-home. An important alternative that has been under-utilized is telework. In order to establish a baseline estimate regarding teleworking, SCAG conducted the first regionwide Telework Study during 2002 including a survey of more than 5,000 workers. The study also supported the region's ecommute program that is aimed at promoting employer-based telework programs.

Teleworkers are defined as employed individuals who worked at home instead of traveling to their usual place of work on any day during the past two months. Teleworkers are different from the work-at-home population who generally operate home businesses and work almost exclusively at home.

*On any given work day, there was an estimated 3.2 percent of total workers in the region who teleworked at home, a total of more than 220,000 workers in 2002. This was not an insignificant share when considering that the transit share of total work trips was only 5 percent.* Since the region experienced a higher average travel time than the nation (29 vs. 25 minutes), it seems reasonable to have a higher rate of teleworking. The total number of vehicle miles saved by teleworkers is estimated to be approximately 45 million vehicle miles in a week.

About 10 percent of total workers were considered teleworkers who worked at home part of the week. Teleworkers in the region faced a longer travel time to work (35 minutes) than the regional average (29 minutes), making teleworking a more attractive option. More than half of the teleworkers worked in sales, professional services, senior management and consulting.

Almost two-thirds of the teleworkers were non-Hispanic Whites whose representation is less than 40 percent of the region's population. Teleworkers were highly educated with 60 percent holding at least a bachelor's degree compared with 25 percent in the general population. Teleworkers were also much wealthier (with median household incomes of approximately $76,000) compared to $46,000 for the general population.

In addition to being wealthier and highly educated, almost three-fourths of teleworkers can determine their own telework schedules. On the other hand, almost 80 percent of the employee non-teleworkers state that their employers would not give them permission to telework. Hence, employers' reluctance is a major challenge to expanding the telework population in the region.

## Airports

### Why is this important?

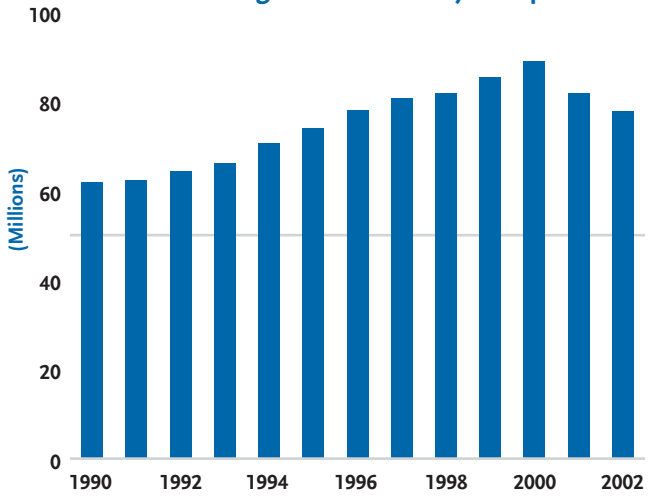
**Air transportation is vitally important to the regional economy of Southern California. Because of its geographical location, Southern California relies heavily on air transportation services to access and interconnect domestic and foreign markets. For example, airborne exports accounted for about 54 percent of the total value of commodity exports out of the Los Angeles Customs District (LACD) in 2002.[14] Adequate aviation capacity and quality services are essential to the tourism, business, and trade sectors of the regional economy.**

### How are we doing?

Due to the economic slowdown and impacts from the September 11, 2001 terrorist attacks, total air passengers at the region's major airports dropped significantly for two consecutive years. Following the drop of 7 million in 2001, total air passengers declined by another 4 million in 2002 to 78 million (Figure 43). Though air passenger grew about 3.7 percent annually throughout the 1990s, total air passengers in 2002 was still below the 1996 level.

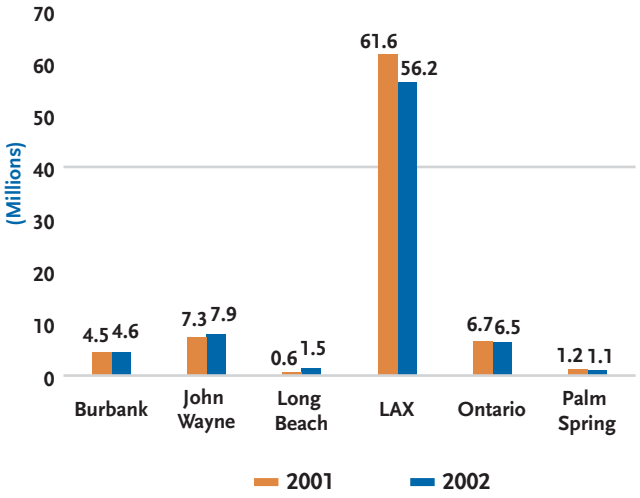
Los Angeles International (LAX) lost more than 5 million passengers in 2002 and dropped to about 56 million annual passengers

**Figure 43**
**Air Passenger Traffic at Major Airports**




*Source: Data gathered from airports*

**Figure 44**
**Air Passenger Traffic by Airport**




*Source: Data gathered from respective airports*

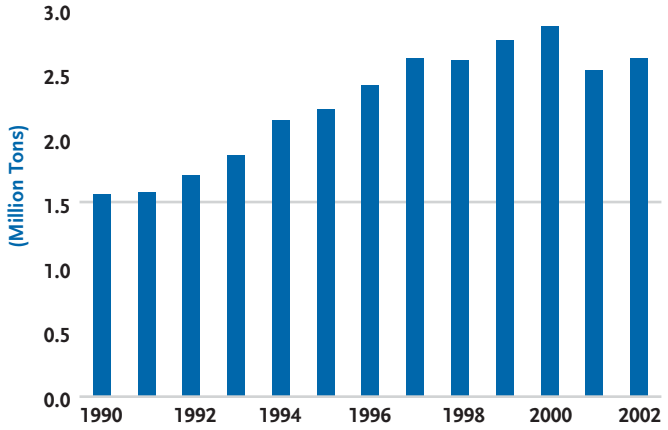
(Figure 44). At the same time, however, several much smaller reliever airports experienced some recovery. For example, passenger traffic at Long Beach Airport increased by close to 900,000 passengers in 2002, more than double its 2001 total. This is due to a large service increase by JetBlue Airways and moderate increases in services by American Airlines and Horizon Air. John Wayne Airport also increased more than half-a-million annual passengers.

The vast majority of international passengers go through LAX, even though other airports (Ontario, Palm Springs) in the region also provide some international services. In 2002, close to 15 million international passengers used LAX, or about 26 percent of its total.

Air cargo increased by 3.7 percent in 2002, a rebound from a 13-percent loss during the previous year (Figure 45). International air cargo got a boost late in the year due to the port lockout. Almost 85 percent of the region's cargo increase took place at Ontario Airport. UPS uses Ontario as a hub for cargo flights to China. In addition, there were also efforts to shift additional cargo from LAX to Ontario. LAX, however, had very little change in cargo traffic in 2002. There has been a trend towards using dedicated cargo aircraft over the belly air cargo of passenger aircraft.[15]

In 2002, among the ten largest airports in the world, LAX ranked 5th in passenger traffic behind Atlanta, Chicago, London and Tokyo (see Figure 80 page 95). LAX also ranked 5th in total cargo volumes following Memphis, Hong Kong, Anchorage and Tokyo (see Figure 81 page 95). Among the top ten airports, LAX experienced the largest percentage drop in passenger traffic between 2001 and 2002.[16]

**Figure 45**
**Air Cargo in the Six Largest Airports**




*Source: Data gathered from airports*

## Ports

### Why is this important?

**▲▲ Almost 85 percent of the imports through the Los Angeles Customs District (LACD) arrive at the region's ports.[17] Continuing to provide a world-class port infrastructure is critical to sustaining a growing and prosperous regional economy. ▲▲**

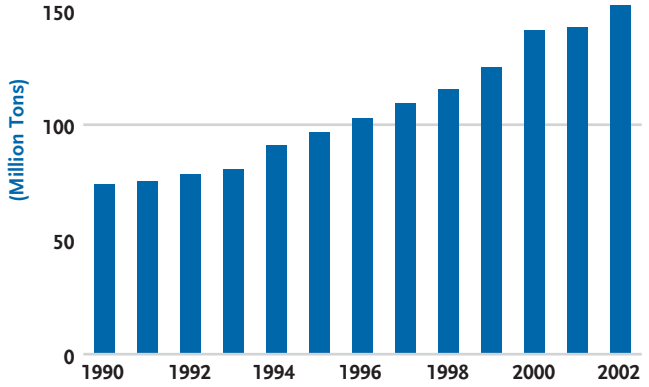
### How are we doing?

In 2002, total traffic at the Ports of Los Angeles and Long Beach increased from 142 million tons in 2001 to 152.2 million tons, a 6.9-percent increase (Figure 46). Close to 84 percent of all cargo shipments were through containers. Traffic at Port Hueneme also increased from 3.3 to 3.6 million tons in 2002.

The twin-ports also strengthened their roles among the West Coast ports. Specifically, among all major West Coast ports, traffic share at Ports of Los Angeles and Long Beach increased from below 50 percent in 1992 to 62 percent in 2002 (see Figure 82 page 96). In 2002, the Los Angeles/Long Beach port complex ranked third in the world in container traffic (10.7 millions of TEUs – twenty-foot equivalent units) following Hong Kong (19.1) and Singapore (16.9).[18] The Port of Los Angeles, due to the opening of a mega-terminal, experienced an 18-percent increase to over 4 million TEUs.

In April 2002, the Alameda Corridor was opened and allowed faster transfer of cargo from the twin-ports to eastern destinations. However, in late 2002, after new contract negotiations failed, a 10-day management lockout of West Coast union dockworkers affected global supply chains and resulted in billions of dollars in business losses.

**Figure 46**
**Port Cargo at Los Angeles and Long Beach**




*Source: Los Angeles Economic Development Corporation*